PATENT SPECIFICATION.

609,242

Application Date : March 8, 1946. No. 7334/46.

Complete Specification Left : March 10, 1947.

Complete Specification Accepted : Sept. 28, 1948.

Index of Acceptance :—**Class 52(ii), J2(a1 : a2 : c).**

PROVISIONAL SPECIFICATION.

Improvements in or relating to Chairs.

I, HAROLD GEORGE DAVIS, of "Brockhurst", 5, Elgy Road, Gosforth, Newcastle-on-Tyne, 3, England, a British subject, do hereby declare the nature of this invention to be as follows :—

This invention relates to chairs, and more particularly to office chairs of the kind having adjustable back rests.

The object of the invention is to provide an improved form of back rest which may be readily adjusted by the user while sitting on the chair ; and which while being of inexpensive construction will be very robust and so better able to stand up to rougher usage than the general run of such chairs as hitherto made.

According to the invention the back rest is mounted on the upper end of a rigid arm which itself is pivotally mounted near its lower end about an axis rigid with the chair frame, the lower end of the said arm being forked to engage over an abutment which is in threaded engagement with a horizontal threaded spindle rotatable in supporting means rigid with the said chair frame, so that turning of the said spindle rocks the arm and so effects adjustment of the back relatively to the user.

According to a preferred form the abutment is of square section and has laterally projecting abutments at its outer end, and a helical spring is passed over the spindle and interposed between the inner face of the pivotal arm and the means supporting the inner end of the spindle, so that positive adjustment is effected in one direction and resilient adjustment in the other, and a resilient back rest is thus provided.

According to one form of the invention as applied to a typist's chair, the chair is of the kind set forth in my co-pending Patent Application No. 7335/46 (Serial No. 609,243), in which the chair frame is of inverted pyramidal form and swivels on a substantially pyramidal base.

[*Price 2/-*]

At the middle of one of the sides of the chair frame there is mounted a box-like bracket having its inner end shaped to accommodate the sloping side of the chair frame. Within the said bracket, at its upper end, there is pivotally mounted a rigid arm of box girder section, the lower end of the said arm being forked to pass over a square section nut having lateral abutments at its outer end, the said nut being in threaded engagement with a threaded spindle in the lower portion of the said bracket, which spindle passes through the front end of the said bracket and through a transverse member at the inner end thereof. The outer end of the threaded spindle projects sufficiently to receive a knurled adjusting head which is rigidly mounted thereon ; while at its inner end it projects through the said transverse frame member sufficiently to receive a washer and nut which is pinned thereto. The nut projects beyond the forked end of the arm sufficiently to locate a helical spring which is passed over the spindle so as to abut against the said forked end and the transverse frame member.

Slidably mounted on the arm is another arm of similar section having at its upper end a short right angle bend to which is secured a horizontal padded back rest which may be pivotally mounted on the said slidable arm, means being provided for locking the said slidable arm at any desired height.

In use the user sits on the chair and with her hand at the back turns the knurled adjusting head until she feels the rest in the desired position, vertical adjustment having previously been effected. Owing to the arrangement of the spring, the user is able to lean back and press back the back rest under the resilient pressure of the spring.

It will be seen that the invention provides a robust and readily adjustable chair with all adjustment parts enclosed with the exception of the knurled adjusting head which of necessity is exposed.

Dated this 8th day of March, 1946.

For the Applicant :
HERBERT HADDAN & CO..
Chartered Patent Agents,
31 and 32, Bedford Street, Strand, London, W.C.2, and
41, Grainger Street,
Newcastle-on-Tyne, 1.

COMPLETE SPECIFICATION.

Improvements in or relating to Chairs.

We, ADA MAY DAVIS, and ROBERT YULE CRUISE DAVIS, both British subjects, and both of "Brockhurst", 5, Elgy Road, Gosforth, Newcastle-on-Tyne, 3, England, the legal representatives of HAROLD GEORGE DAVIS, deceased, late of "Brockhurst", 5, Elgy Road, Gosforth, Newcastle-on-Tyne, 3, England, late a British subject, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement :—

This invention relates to chairs, and more particularly to office chairs of the kind having a back rest which is adjustable against resilient means by means of a threaded spindle arranged between the chair frame and the back rest.

The object of the invention is to provide an improved form of back rest which may be readily adjusted by the user while sitting on the chair, which will be capable of yielding to the user's back as he or she leans against it so that it will follow the to and fro movement of the user's back and thus give it support through a range of positions, without changing the position of the threaded spindle relatively to the chair frame ; and which while being of inexpensive construction will be very robust and so better able to stand up to rougher usage than the general run of such chairs as hitherto made.

According to the invention the back rest proper is mounted on the upper end of a rigid arm which itself is pivotally mounted near its lower end about an axis rigid with the chair frame, the lower end of the said arm being forked to engage over an abutment which is in threaded engagement with a horizontal threaded spindle rotatable in supporting means rigid with the said chair frame, so that turning of the said spindle rocks the arm and so effects adjustment of the back relatively to the user, without any change in position of the spindle relatively to the chair frame.

According to a preferred form the abutment is of square section and has laterally projecting abutments at its outer end, and a helical spring is passed over the spindle and interposed between the inner face of the pivotal arm and the means supporting the inner end of the spindle, so that positive adjustment is effected in one direction and resilient adjustment in the other, and a resilient back rest is thus provided.

The invention will now be described by way of example with reference to the accompanying drawings which show a chair in which the chair frame is of inverted pyramidal form and swivels on a substantially pyramidal base.

In the said drawings :

Fig. 1 is an elevation.

Figs. 2 and 3 are a fragmentary elevation and plan from beneath respectively to an enlarged scale of the back rest.

Referring more particularly to the drawings, 1 is the chair base on which is swivelled a chair frame 2. At the middle of one of the sides of the chair frame there is mounted rigidly a box-like bracket 3 having its inner end shaped to accommodate the sloping side of the chair frame. Within the said bracket, at its upper end, there is pivotally mounted about a pin 4 a rigid arm 5 of box girder section, the lower end of the said arm being forked to pass over a square section nut 6 having lateral abutments in the form of a transverse pin 7 welded thereto at its outer end, the said nut being in threaded engagement with a threaded spindle 8 in the lower portion of the fixed bracket 3, which spindle passes through the front end of the said bracket and through a transverse frame member 9 at the inner end thereof. The outer end of the spindle 8 projects sufficiently to receive a knurled adjusting head 10 which is rigidly mounted thereon ; while at its inner end it projects through the transverse frame member 9 sufficiently to receive a washer 11 and nut 12 which latter is pinned thereto. The nut 6 projects as a hollow sleeve 6*a* beyond the forked end 5*a* of the arm 5 sufficiently to locate a helical spring 13 which is passed over the spindle 8 so as to abut against the said forked end and the transverse frame member 9.

Slidably mounted on the arm 5 is another arm 14 of similar section having at its upper end a short right angle bend 14*a* to which is secured a horizontal padded back rest 15 which may be pivotally mounted on the said

slidable arm, means such as a locking head 16 being provided for locking the said slidable arm at any desired height.

In use the user sits on the chair and with her hand at the back turns the knurled adjusting head 10 until she feels the rest 15 in the desired position, vertical adjustment having previously been effected. Owing to the arrangement of the spring 13, the user is able to lean back and press back the back rest 15 under the resilient pressure of the spring 13.

It will be seen that the invention provides a robust and readily adjustable chair with all adjustment parts enclosed with the exception of the knurled adjusting head 10 which of necessity is exposed.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is :—

1. An improved adjustable chair back rest wherein the back rest proper is mounted on the upper end of a rigid arm which itself is pivotally mounted near its lower end about an axis rigid with the chair frame, the lower end of the said arm being forked to engage over an abutment which is in threaded engagement with a horizontal threaded spindle rotatable in supporting means rigid with the said chair frame, so that turning of the said spindle rocks the arm and so effects adjustment of the back relatively to the user, without any change in position of the spindle relatively to the chair frame.

2. A chair back rest according to claim 1 wherein the abutment is of square section and has laterally projecting abutments at its outer end, and a helical spring is passed over the spindle and interposed between the inner face of the pivotal arm and the means supporting the inner end of the spindle, so that positive adjustment is effected in one direction and resilient adjustment in the other.

3. A chair back rest according to claim 2 wherein the abutment projects inwards as a hollow sleeve beyond the end of the pivotal arm to locate the spring.

4. An improved adjustable chair back rest having its parts arranged, combined and adapted to operate substantially as described with reference to and as illustrated in the accompanying drawings.

Dated this 4th day of March, 1947,
For the Applicants :
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and
31 and 32, Bedford Street, Strand, W.C.2.

Abingdon : Printed for His Majesty's Stationery Office, by Burgess & Son.—1948.
Published at The Patent Office, 25, Southampton Buildings, London, W.C.2, from which copies, price 2s. 0d. each (inland) 2s. 1d. (abroad) may be obtained.

[This Drawing is a reproduction of the Original on a reduced scale.]

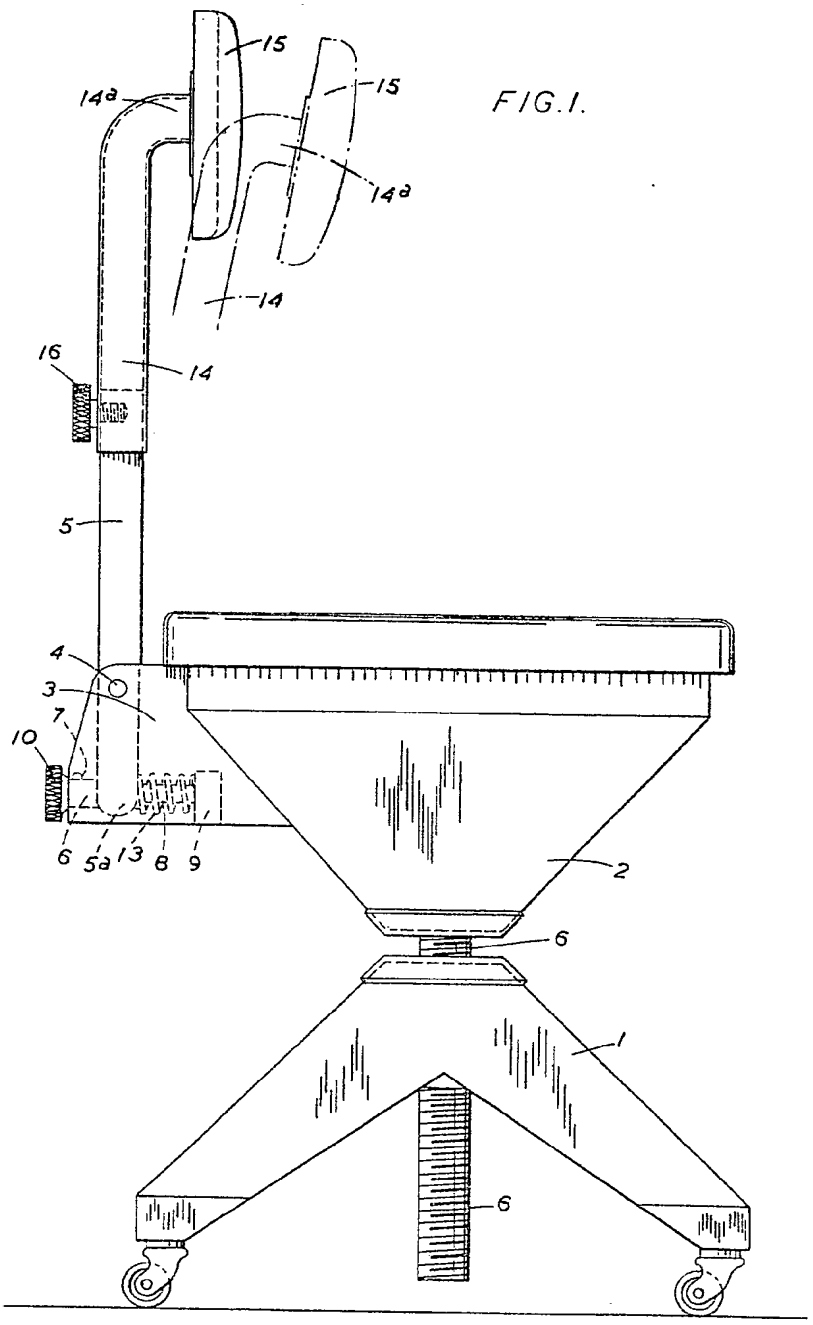


FIG. 1.

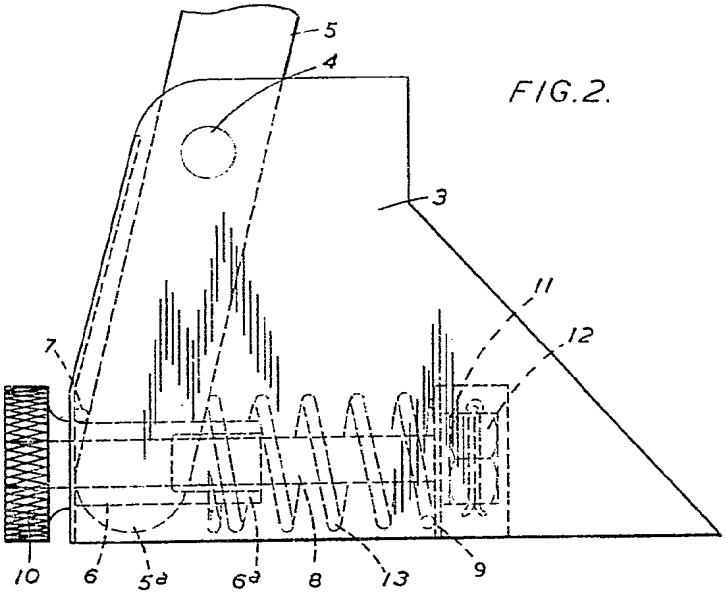
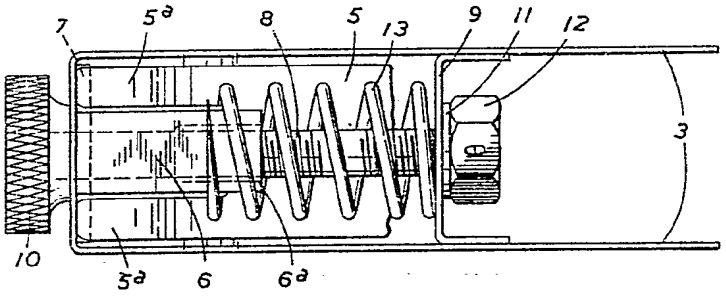


FIG.2.

FIG.3.



609,242 COMPLETE SPECIFICATION

2 SHEETS

SHEET 1

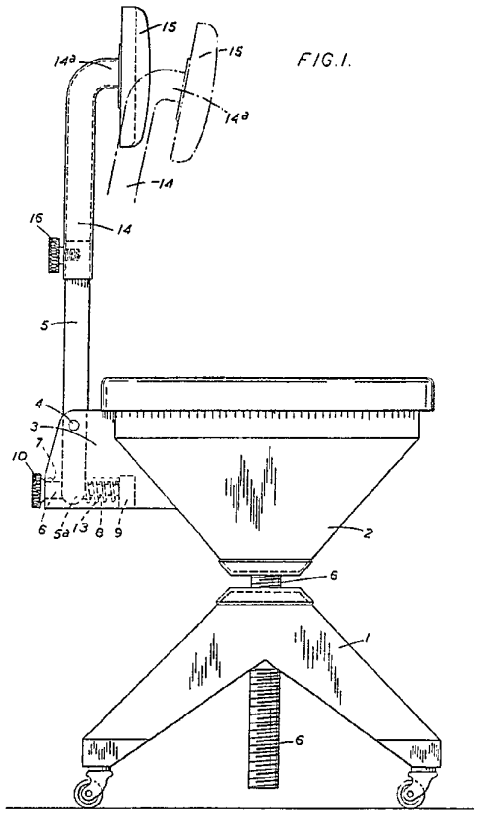


FIG. 1.

SHEET 2

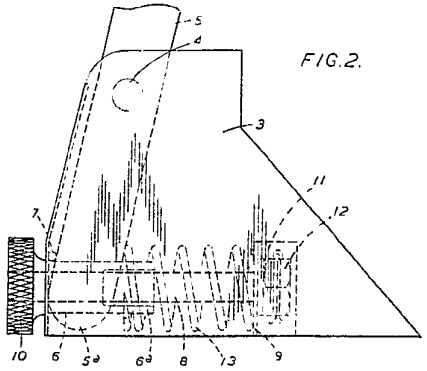
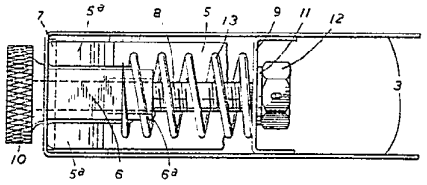


FIG. 2.

FIG. 3.



[This Drawing is a reproduction of the Original on a reduced scale.]

H.M.S.O.(Ty P.)